THE

INTRODUCTORY ADDRESS

TO THE

EIGHTH LECTURE COURSE

AT THE

ALBANY

COLLEGE OF PHARMACY,

DELIVERED OCTOBER 1, 1888,

BY

WILLIS G. TUCKER, M. D., PH. D.

PROFESSOR OF CHEMISTRY.

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ADDRESS.

GENTLEMEN:

Standing in this place this evening, to fulfill the same pleasant duty which twice before has fallen to my lot, the feeling of embarrassment which I might otherwise experience is lessened by the recollection that of those now gathered here scarce any were present on the former occasions. What therefore seems to me like repetition, the place, the occasion, and some things that I must necessarily say being the same, will have for most of you a certain novelty at least, and this thought reassures and reconciles me to the position in which I am placed. And aside from this sole consideration, the duty assigned me is a very pleasant one. To welcome back our old students; cordially to greet those who for the first time are assembled here, and to address to you some words of counsel, and some general considerations concerning the work in which we are all, in one way or another, engaged, is indeed a grateful task, and free from any elements but the pleasantest. Most gladly, therefore, do I, as a representative of the faculty, welcome you to the Albany College of Pharmacy. You are here with a common purpose, and as workers in the same field have the same end in view. Your object, if I understand it aright, is to supplement the knowledge you have acquired in your calling pursued as an art, by a course of study in which general principles occupy the first and most important place. You desire to broaden your knowledge by basing it upon a firmer foundation. The scientific or theoretical side of pharmacy as distinguished from its practice is mainly to engage your attention. Facts are to be acquired, but principles are to occupy an important place henceforth in your work.

Every natural change which takes place has an antecedent cause, and the scientific worker seeks to distinguish these causes, and from them to develope general principles and laws. Without a knowledge of these laws and an understanding of the

relations of different classes of facts and their bearing upon each other, and without an orderly arrangement or classification of the whole, there is no science. A lack of this knowledge distinguishes the artisan from the scientist, and an appreciation of this distinction is essential to those who desire to become proficient in any branch of science. You are here chiefly to pursue your studies from this scientific side, and with some of you it will be but a beginning and with others the continuation of a course which, in the very nature of things, can never be completed. The domain of the unknown is, to the wisest, so vast, and of the known, to most of us, so small that although we are never to be discouraged by the extent of the former, and thus tempted to neglect the opportunities presented to us for extending the latter, it nevertheless behooves us to place a modest estimate upon our powers, and not to be discouraged if in our eagerness and haste we fail to reach the goal that our too enthusiastic fancy may have set before us.

Knowledge is acquired chiefly in two ways. From the first dawning of intelligence the child gains his by observation and experiment, and this we may call the experimental method. Didactic instruction has no place in the education of the young child who acquires his knowledge by the exercise of his own faculties and through the sensations, directly conveyed to his mind, which he experiences. Gradually the child comes under the care of tutors and governors, and by too many educators a systematic course of teaching by means of books and verbal precepts is substituted, early in life, for a more natural and rational method. The child is required to reason at an age when the reasoning faculties naturally lie, and should be allowed to lie, dormant, and the quick perceptions, ready intuitions, natural observations and retentive memory of the young pupil are neither trained as they should be nor directed in any useful channel. Rousseau perceived this most clearly more than a century ago, and in his "Emile," a book of great originality, abounding in good sense and deep insight, though mixed with much that is exaggerated and meretricious, he depicts with great force the evils resulting from the then universal methods of instruction, and shows us in the person of Emile how he would have a child educated. Nothing is to be taken on faith; the pupil is to be told nothing that he can discover for himself; he is to accept nothing as truth on the mere say-so of another

if he can make the demonstration for himself ; his faculties are to be trained and developed, not forced—in other words, there is to be no cramming. Disgusted with the pedantry of the instructors of his day, and enthusiastically advocating a more rational method, Rousseau was an extremist, and his theories are often impracticable, and his views one-sided and exaggerated, but though his book was fiercely attacked and bitterly denounced, it contained too much of truth to be borne down by mere invective, and its effect was far-reaching, and has lasted long. Much that his Emile contains, which raised a violent opposition when it first appeared because so new and so radically different from received ideas, seems to us to-day quite commonplace, because so evidently true and so generally accepted. Basedow, and Pestalozzi, and Froebel, were followers of Rousseau, and their writings gained for those of their predecessor a wider audience than otherwise they would probably have secured. To them chiefly we owe our Kindergarten systems and object-lesson teaching, and Pestalozzi's romance of Leonard and Gertrude may be read with great profit by educators to-day. The good that these deep-thinkers and clear-seers have done, and the effect of their work upon educational methods at home and abroad, can hardly be overestimated. Herbert Spencer, in his admirable essays upon education, re-states and emphasizes much for which they labored to secure a hearing more than a century ago, and the effect of their teaching is seen in the methods now pursued in our schools for the young, and in a scarcely less degree in our higher institutions. The general introduction of the laboratory method of instruction in our academies and colleges shows that the youth of to-day are no longer expected to learn from books and lectures alone, but are taught to investigate, to prove the truth of fundamental propositions, and to think for themselves after they have learned to reason. Thus are the observing and reasoning faculties trained, the habit of original thought developed, creative work becomes possible, and original investigation a not uncommon pursuit. Doubtless when we survey the past, we are ready freely to admit that "there were giants in the earth in those days." The Keplers and Newtons, the Lavoisiers and Davys. may not be easily matched if we call the roll of learned men to-day, but nevertheless it is true that there never was a time when so large a number of the community were so well educated, and so well

fitted to employ the machinery of modern scientific methods as at the present time. The chasm formerly existing between the educated few and the ignorant masses, is no longer so deep, while the few have become the many, the masses having been raised from their blindness and ignorance by modern educational methods and modern civilization.

Now the other method, which we may call the didactic, differs radically from the experimental, and in extolling the one, we are not to lose sight of the fact that the other, rightly used, has been and must ever continue to be of the greatest service in education, and that we cannot separate them without working irreparable injury. But it was the mistake of the older pedagogues to suppose that youthful ardor and freedom of thought should be repressed, and a blind allegiance to authority demanded. In many countries the Church and the University were one, and a slavish obedience to the behests of the former, and a conservative following of the leaders of the latter, were alike expected and demanded of those who sought instruction at these seats of learning. We cannot now pause to trace the history of the conflicts thus early engendered between religion and science, nor to show how purely dogmatic was most of the teaching of the last few centuries, but despite the bondage in which thinkers were held, there appeared from time to time daring innovators who pushed their inquiries in every direction, and though their books were burned, and they themselves often forced to recant for fear of a like fate, yet the world moved, truth survived, and knowledge increased among men. And is it not a painful fact to contemplate, that after all these years, much of this blind allegiance to authority should still remain among us, exercising as it does an influence truly baneful in retarding the general acceptance of evident truths. Astronomy has long since demonstrated that the earth is not the center of the universe ; geology has long since demonstrated that the earth was not formed and fitted for man's occupancy in six days' time, but the scarce less certain truths of evolution are combated as fiercely by certain classes in our midst to-day as when they were first promulgated. Such a condition, with its many attendant evils, results from a too dogmatic teaching, and any system of education which fails properly to combine these two methods of instruction, of which we have been speaking, is one-sided and incomplete. Rousseau, in the work to

which we have referred, says, speaking of the pupil: "Let him know a thing because he has found it out for himself, and not because you have told him of it. Let him not learn science but discover it for himself. If once you substitute authority for reason, he will not reason any more; he will only be the sport of other people's opinions." There is sound sense here, but the idea may be pushed too far, as in saying with reference to the facts of physics: "I would not have my pupil study them in a laboratory of experimental physics. I dislike that array of machines and instruments. The parade of science is fatal to science itself. There are many excellent labor-saving methods of studying science, but we are in sore need of one to teach us how to learn them with more effort of our own. So many instruments are invented to aid us in our experiments, and to supplement the action of our senses, that we neglect to use the senses themselves. If we surround ourselves with instruments, we shall no longer find them within ourselves." These are, of course, extreme views. There is truth here, but his condemnation of methods which may be abused, is much too general and sweeping. However desirable it may be to cultivate the habit of close observation, experiment with self-devised apparatus, and deduction of principles from self-discovered facts,—and no one can for a moment doubt the necessity for training of this sort,—yet a pupil restricted to this kind of personal investigation would make but slow progress, and unless possessed of more than ordinary ability, scarce any progress at all. We must accept much on authority,—at least, in certain departments of learning this can safely be done,—and unless we make free use of the facts discovered by others, our advance will indeed be small. In many subjects of study the real work begins at the point where others have left off, and the student must as speedily as possible acquaint himself with all that has been learned in his particular department, and make use of every means within his reach to acquire this knowledge as speedily and as easily as possible. Hence the value of the libraries, collections, and mechanical equipment of our higher institutions, is inestimable, and laboratory instruction in all departments of science is to-day regarded as absolutely essential in our courses of instruction. Says a recent author, speaking of the intellectual methods of science, and what is said applies with equal force to instruments of research,—"Scientific meth-

ods bear the same relation to intellectual progress that tools, instruments, machines, and mechanical contrivances of all sorts, bear to material progress. They are intellectual contrivances, indirect ways of accomplishing results far too hard for bare-handed unaided intellectual strength. As the civilized man has little or no advantage over the savage in bare-handed strength of muscle, and the enormous superiority of the former in accomplishing material results is due wholly to the use of mechanical contrivances or machines, even so in the higher sphere of intellect, the scientist makes no pretension to the possession of greater unaided intellectual strength than belongs to the the uncultured man, or perhaps even to the savage. The amazing intellectual results achieved by science are due wholly to the use of intellectual contrivances or scientific methods.' The student, therefore, cannot afford to dispense with these aids. He cannot investigate every question from the outset himself. If he would accomplish anything, he must possess himself of the accumulated wisdom of those who have preceded him in his own field, and he must bring to bear in his work every known resource by which he may increase his powers and extend his sphere of operations. The longer he can make the working arm of his lever, the greater advantage will he derive. That great results have been achieved by simple means, proves nothing to the contrary, and he who would advance the world's knowledge to-day has need to use every aid that modern ingenuity can give him.

If then we inquire what should be the nature of a rational course of instruction, shall we not reply that it must be one in which the pupil shall be taught to observe, to experiment, and to think for himself, and shall be encouraged to push his inquiries without check in any direction, and that to the end that he may be able so to do, it shall furnish him with those varied aids which experience has shown to be serviceable in the prosecution of his studies and the extension of his researches. We must, in other words, combine the experimental and the didactic. We must teach many matters of fact with authority, but we must so train the pupil that he will not blindly follow the teacher, but shall be able critically to examine the facts presented for his acceptance, and weigh the evidence upon which they rest, and more than all be fitted to carry forward the work which others have begun.

Now lest it be said that such an outline applies mainly to a course of scientific instruction, we remark that the methods which are applicable and to be recommended in such a course, are in the main those which may be followed with advantage in the pursuit of knowledge in any direction. Knowledge is advancing along many different lines, but the greatest progress is after all being made in the study of nature. The physical sciences during the last half century have been developed to an extent not dreamed of in the past, while metaphysical studies have been relegated to a subordinate place, and some of these studies have made little or no progress during the centuries The reason is not hard to find. We have learned to distinguish those things which may be known from those which are, from their very nature, unknowable; that which may be proved from that which is always in dispute, and we have learned to separate those collections of clearly related facts which may be systematically arranged, and from which general principles and laws may be deduced from those unwieldy masses of half-truths which may be differently viewed from any standpoint, and which can never be brought together in compact form, or scientifically treated. Underlying the physical sciences is a substratum of facts from which we derive laws, but in most of those studies which are commonly classed under metaphysics using the term in its broadest sense, we find no corresponding basis of universally accepted truths, and as the workers in such branches are seldom agreed as to the meaning of the very terms which they employ, exact discussion becomes well-nigh impossible. Take theology, for instance. I speak not of practical religion, but of the science so called, and what do we find but that the theologians are each from his own standpoint, and with all the bias which inherited beliefs or irrationally adopted creeds give, discussing fundamental propositions which have been argued for centuries, and concerning which scarce two disputants are in accord. Nothing is farther from my purpose than to speak slightingly of religious beliefs which have in one form or another been held by all nations and at all times,—beliefs that have influenced the life and made for righteousness,—for I refer alone to theology as treated in the schools, where arguments are based on propositions incapable of proof, and terms to which no fixed meaning can be assigned are used as if capable of logical employment and with scientific precision. The

result has ever been the same,—no agreement, but ever widening diversity ; fierce onslaught and bitter rejoinder. When will those who thus dispute learn to distinguish between those fields in which scientific methods may be employed, and those wide domains in which, while room exists for speculation, dogmatism should have no place. So many things in these days force themselves upon our attention, that we shall do well so to train our faculties that we may see clearly the difference between those which will repay investigation, and those which give no promise of reward. But we too often credulously accept whatever is put forth with a show of learning, no matter how sophistical the arguments, nor how false the premises on which it is based. We have no need to go back to the idle speculations of past ages for illustrations. Look around, and you may find on every hand dupes of mere charlatans by the score, and believers in every kind of humbuggery, and these often among people otherwise of fair intelligence, and neither illiterate nor inexperienced in the ordinary affairs of life. Some of the isms which have recently been urged and discussed, count among their votaries men and women occupying high places in society, in the church and in the state, and the explanation of a fact, otherwise so surprising and so discouraging, is that these people have neither a real love for truth, nor knowledge of the way by which truth may be discovered. They accept with equal readiness guides true and false ; they have not learned to weigh evidence for themselves, nor to distinguish between the blatant claims of charlatans and established facts ; they fail to see that in their very essence some things are absurd, incapable of proof, or unworthy of investigation. In other words, their credulity results not so much from a lack of intelligence as from a faulty education, and especially from a want of scientific training, and I have thought that it might be profitable for us briefly to consider this evening some of the methods of science, since these have been of such service to mankind in the search for truth. They are capable of wide application, and their practice tends to clear thinking and good workmanship ; and surely the ability to think clearly and to work well is worth cultivating in any calling. Especial reference will be made to the methods employed in the study of the physical sciences, and it will be my endeavor to point out some of the characteristics of good

scientific work, and to exhibit something of the spirit which instigates and controls the scientific worker.

And first, all truly scientific work aims at exactitude. The great majority of people are hopelessly inexact. It is true that in dealing with dollars and cents, business men, and indeed most men, are precise in their reckonings, but in a thousand and one other things they are careless as to matters of fact. If we look carefully at this matter, we shall find that many of the annoyances of life come from a carelessness in this respect —a want of accuracy. The habit has not been cultivated. Now workers in any scientific field know full well the necessity for preciseness. Terms must be correctly used ; observations must be made with precision, and facts must be truly stated. Look at the scientific papers in a journal or volume of transactions which publishes the result of original investigations, and observe how concise the language, how precise the statements. There is no diffuseness in the style, no approximations nor guess-work where exact statement is possible. Accuracy as a habit is opposed to all slovenliness, and to all hap-hazard methods of statement and of work. Young men before entering upon other business pursuits are often placed in banks that they may learn with what rigid exactness money is handled and accounts are kept, and with a view to a similar kind of training in another direction, I would have students who propose following professions make thorough study of some one of the natural sciences, acquiring in the laboratory, museum or work-room the habit of exact observation and precise measurement and statement in such way that it will stick to them for life. And surely there is no calling in which this habit is more essential than in that in which you are engaged. Study the United States Pharmacopœia, and observe the preciseness of statement throughout, and yet in the following of its explicit directions how many mistakes are made. A single illustration will suffice. I have recently examined a large number of samples of diluted acetic acid procured from retail drug stores in different parts of this State. It is not a very important preparation, perhaps, but It is a very simple one, and easily made, according to the directions of the Pharmacopœia, by dilution of the stronger acid, and yet of these samples not one quarter were properly made, the remainder varying from a third to five times the proper strength. In the preparation of such an article, absolute pre-

cision is not required, though there should be a fair degree of accuracy, but of these samples many were evidently "made by guess." The pharmacist who has learned to work with measuring flask and burette, with hydrometer and chemical balance, will never guess at a thing, but where measurements are demanded he will make them with care, and in general, where there are two ways of doing a thing, he will instinctively choose the right one, and such work may be depended upon. Pharmacopœial terms, and pharmaceutical terms generally, he will use correctly, and he will deem it of more importance to be right than to be rapid in his work. If young men knew how highly this habit of accuracy, which is really but another name for truthfulness, was valued, they would cultivate it more, prompted by self-interest, if by no higher motive.

And next, science is painstaking. Real truth being sought, the surest way by which it may be discovered is followed, and not the easiest. The work in hand is well considered, and from all points of view; difficulties are recognized and not put out of sight; methods are weighed and the best selected, and after this deliberate preparation the real work begins. That "haste makes waste" no man recognizes more clearly than the scientist, and in the hope of accomplishing much he is willing, not to risk much, but to do much. He does not turn aside from the main road in the hope of luckily discovering some short cut, but is content with slow steps and short stages if so it be that he is advancing. He does not expect great results from small expenditures, but knows that time, energy, painstaking care must be bestowed upon work which is to be valuable and lasting. This is the scientific method, and from it we may learn a lesson. The big oak grows from the little acorn, but the acorn represents the fruitage of a preceding oak which had its beginnings in the distant ages of the past. Great results may succeed small events, though they have not been caused by them. Good work goes into honest goods, and if we are to accomplish much we must do much.

But this painstaking labor is repugnant to most men. They are unwilling to labor, and must have quick results. They have need, perhaps, to study some subject, and they skim the mere cream of it. They are ignorant, and ask for information, and before the explanation is given they have ceased to listen. Their attention is not concentrated upon the matter under con-

sideration. "Inattention to the present business, be it what it will," said Lord Chesterfield, "is the never-failing sign of a little, frivolous mind." And this shiftlessness, so characteristic of many men, is the result of habitually dealing with the surface only of things through unwillingness to dig patiently down to the roots of them. Such go from subject to subject, and, in the zeal for novelty, lose the relish for wholesome knowledge.

And what has been said necessarily implies that scientific work is laborious work. Foundations are laid deep and great preparations are made for great work. Read the lives of Cuvier, of Agassiz, of Darwin, and you will learn what diligence is. In their works you will find the results of hundreds of laboriously conducted observations summed up in paragraphs. Such men have never shrunk from labor, for it has been to them a necessity and become a pleasure. The habit of systematic work developes a love for labor, and as we observe the fruits of our planting we view them without a thought of regret for the toil expended in the preparation of the ground, the sowing and the tending, though done in the sweat of our brows.

And this painstaking labor which distinguishes scientific work is marked by a patience no less characteristic. The worker does not look for quick returns, but patiently awaits the issue; and so must we all, the student and the professional man, the artisan and the artist,—each must work patiently and thoughtfully, content if in due season he achieves the result which long ago he planned. And if we read biography aright we shall learn that the men of great deeds in every age have in patience possessed their souls. Learn then to look, not for quick results and great, but to labor hopefully, patiently, knowing that in due season we shall reap if we faint not.

And again, the truly scientific worker is governed by a judicial spirit. He is accustomed to weigh evidence and strives to consider all questions impartially. He holds his judgment in abeyance, avoids unwarranted conclusions and hasty generalizations. Mere authority has little weight with him upon matters concerning which he is competent to form an opinion, and before he accepts new ideas he familiarizes himself with the evidence alleged in their support, recognizing the fact that there are two sides to almost every question, and that a conclusion can seldom be reached till both have been considered. He is therefore always open to conviction, and never ashamed

to acknowledge himself in the wrong when shown that he is in error. To support a theory he will neither close his eyes to obvious facts nor persist in maintaining untenable positions. Those paper philosophers, as they have been called, who spend their lives reviewing other men's work and criticising that which they are unable rightly to comprehend, have no appreciation whatever of the methods of science. Such men abound. We find them on the lecture platform and in the pulpit, and their effusions occupy much space in the magazines and reviews. While the real scientist is often willing to say, "I do not know," "It is out of my line," "I am not an authority," these superficial essayists and shallow critics are ever ready to render decisions and pass their judgment upon the weightiest matters. But too often these ingenious partisans, with their specious arguments and fallacious reasonings, their rhetorical vaporings and heated arguments, carry the multitude along with them. As an illustration, we have only to recall the bitter denunciation heaped upon Darwin and the ridicule to which he was subjected a few years back, and how often do we hear Huxley and Tyndall and Herbert Spencer disposed of by those who have scarce read their writings, and, if they had, would be quite incompetent to form an opinion upon them. Many of these critics of other men's performances are ever ready to declare to us the intentions of the Almighty, and to denounce as heretical or impious that which, in their view, is inconsistent with what they declare to be His plans. True science is not thus arrogant nor dictatorial. It is honest, even in its doubts. To persist in viewing a subject from one side alone, and to close the eyes to demonstrated truths is as dishonest as it is illogical and absurd.

And another characteristic of real scientific work is that it is not inspired by a desire for gain ; it does not seek pecuniary reward. I anticipate your probable criticism. All honorable work deserves compensation, you will say ; surely the laborer is worthy of his hire ; wealth honestly amassed, and worthily employed is not to be despised. Very true, and yet the fact remains that the best work is not undertaken solely for the purpose of securing a direct pecuniary return. At all events, the best scientific work is not so entered upon. There lies at the root of it all the desire to discover facts, to advance knowledge, and in the search for verities the earnest worker is indif-

ferent to their practical value or worth in dollars and cents. The benefits which the world has received from the discoveries of science are inestimable, but very seldom has it happened that the discoverers has been directly rewarded. A class of middlemen exists, a kind of rear-guard of science, ever on the alert to seize upon those ideas which can be turned to practical account and made to pay, and this class, often very enterprising and useful to society, secures the profit and often much of the credit of discovery as well. I do not desire to hold up to your view the great names upon the roll of fame of those who have labored in poverty, often neglected or dispised, to lay the foundations of our knowledge, for there would be little in the recital to encourage or to incite us to like exertions, but I do desire to impress the fact that unless the work we do is inspired by other and higher motives than a mere desire for gain, we shall never develope our best powers or exercise the noblest faculties of our minds. If the question with us ever is, "Will it pay?" and if we reject all toil as drudgery which does not promise quick reward, we shall assuredly do much that is trivial, perhaps something that is base, and shall probably leave undone work that might have led to higher things and had a real value.

And the last characteristic of real scientific work of which I shall speak is that it is conceived in enthusiasm and executed in hopefulness. Unless the laborer in this vineyard is possessed by a real zeal, his measure of success will be small. His should be, not the too sanguine visionary expectancy prompting to a belief in the miraculous and imbued with credulity, but an hopeful enthusiasm which will not be dismayed by the obstacles it must necessarily encounter, and ever prompts to persistent effort and unremitting toil. Real science is, while patient, hopeful, not over-sanguine but confident. And are not these the qualities which workers in any field must possess, if success is to be looked for? If work is to be to us more than a mere means for supplying our daily necessities; if it is to develope the workman's powers and raise him above the mere routinist's level, the daily toil, however humble it may be, must be undertaken with confidence and pursued with a real ardor. The man who sets not before him some high standard, who looks not forward to some ideal condition to which he strives to attain, who does not long to rise, but is content merely to exist, has caught no glimpse of the possibilities of life. Men talk of talents and

opportunities, of advantageous positions and lucky chances in life, but after all life is to each of us very much what we choose to make it, and the fact that few attain to positions of commanding eminence or achieve extraordinary results, affords no excuse for half-hearted labor, or listless indifference to the vast interests of life, for if we take a large view of its possibilities and of the returns which labor brings, we shall at least have started aright,—success lies in that direction. Says Lowell,

> "Life is a sheet of paper, white,
> Whereon each one of us may write
> His word or two, and then comes night.
> Greatly begin! though thou have time
> But for a line, be that sublime—
> Not failure, but low aim is crime."

These then are some of the methods of science, some of the characteristics of scientific work. In considering them, my desire has been to exhibit something of the spirit which instigates and directs such work; to show the value of scientific training in the conduct of our daily affairs, be they what they may, and the consequent advantages which result from giving to the study of science a prominent place in our educational systems. For, surely, if exactitude or a love for truth; painstaking, patient labor, actuated by higher motives than a mere desire for gain; a spirit of judicial fairness, and a hopeful enthusiasm, are habits or qualities of mind which it is desirable to cultivate, then the study of some branch or branches of science, rightly pursued, is capable of yielding the most valuable results, and developing the best and highest powers of the mind, fitting it to deal with the ordinary affairs of daily life, or to grapple with the deepest problems which engage the attention of mankind. In the hints which I have given you there is, I am well aware, nothing that is new, nothing original. "All truly wise thoughts," says Gœthe, "have been thought already thousands of times, but to make them truly ours we must think them over again honestly, till they take root in our personal experience." To see truths clearly, does not suffice. We must live them, make them our own, be governed by them, and only when we thus do, are our lives ordered aright.

Allow me, in conclusion, again to extend to you all, on behalf of the trustees and faculty of this school, a hearty welcome. We earnestly hope that the coming session may be a profitable

one to every member of the class, and that at its close you may be able with satisfaction to look back at the course you have pursued, feeling that your time has been well spent, that true progress has been made, that no opportunities for self-improvement have been neglected. For individual gain must always be by the voluntary improvement of self. Teachers are of no avail, institutions are powerless, educational facilities are of no service, unless there is within, the ambition and the determination which stimulates to continued effort. Unless a man realizes in the truest sense that to raise himself is as much within his power as to debase himself, to correct existing faults as easy as to acquire new ones, and that to develope and strengthen character lies as clearly within the range of his abilities as does the volitional abandonment of high principles, and the giving way to those impulses which spring from the lower nature, ever to be subdued, he will never rightly begin to live, nor achieve that true success which is within his grasp. We must have high ideals and lofty standards, but no mere exercise of the emotions, resulting in spasmodic effort, exhausting itself and speedily relaxed, can take the place of that indwelling consciousness of power to govern ourselves, and that confidence in self which, lying deep within the heart, prompt to action and are the inspiration of life. "There is none of the social goods," says Emerson, "that may not be purchased too dear, and mere amiableness must not take rank with high aims and self-subsistency." Self-confidence begets great undertakings and carries them to a successful termination. Without it we are at the mercy of the world, discouraged by failure when we should be borne upward by hope. Strive then to strengthen this confidence, which perhaps in no way can so surely be done as by accepting fearlessly the responsibilities which we may be called upon to assume. Excessive physical strength comes often with the need for its exercise, and still more certainly will the man willing to rise with the emergency find himself endowed with power to perform the task put upon him. "Act well at the moment," says Lavater, "and you have performed a good action to all eternity." By timidly holding aloof from the present duty we may miss the golden opportunity, but by courageously putting our shoulder to the wheel when we are called upon to labor we strengthen ourselves for future exertion and achieve

the real successes of life. "There is a tide in the affairs of men which, taken at the flood, leads on to fortune," but the occasion neglected may never return. Accustom yourselves then to perform the duties and meet the obligations of life manfully and with confidence, and when the critical moment comes—the time when upon the decision you make much may depend—you will not be found wanting.